Serial No. 09/585,819, filed June 1, 2000
Title: METER TO INTERNET PATHWAY
Inventor: John Gerald Van Heteren
REPLACEMENT SHEET

OIPE JC131
FEB 18 2005
PATENT & TRADEMARK OFFICE

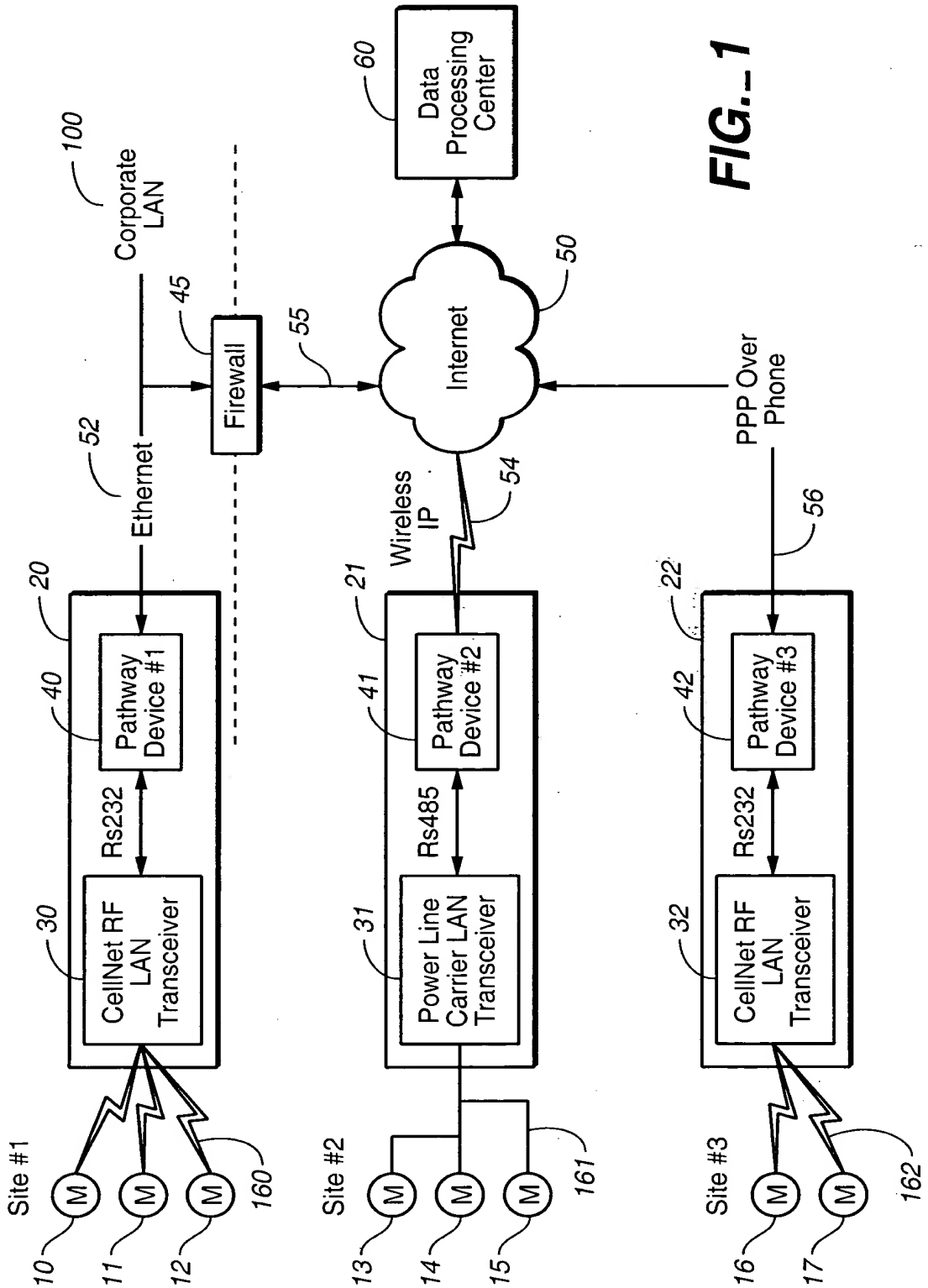

FIG._1

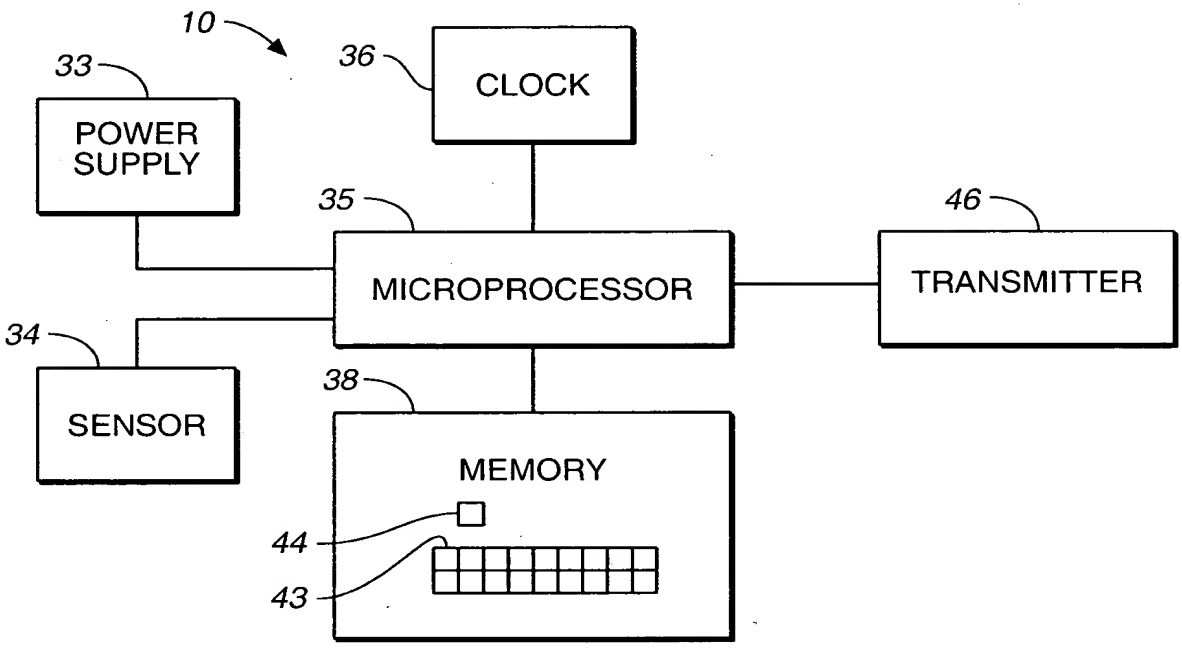
10
33
POWER SUPPLY
36
CLOCK
35
MICROPROCESSOR
46
TRANSMITTER
34
SENSOR
38
MEMORY
44
43

FIG._2

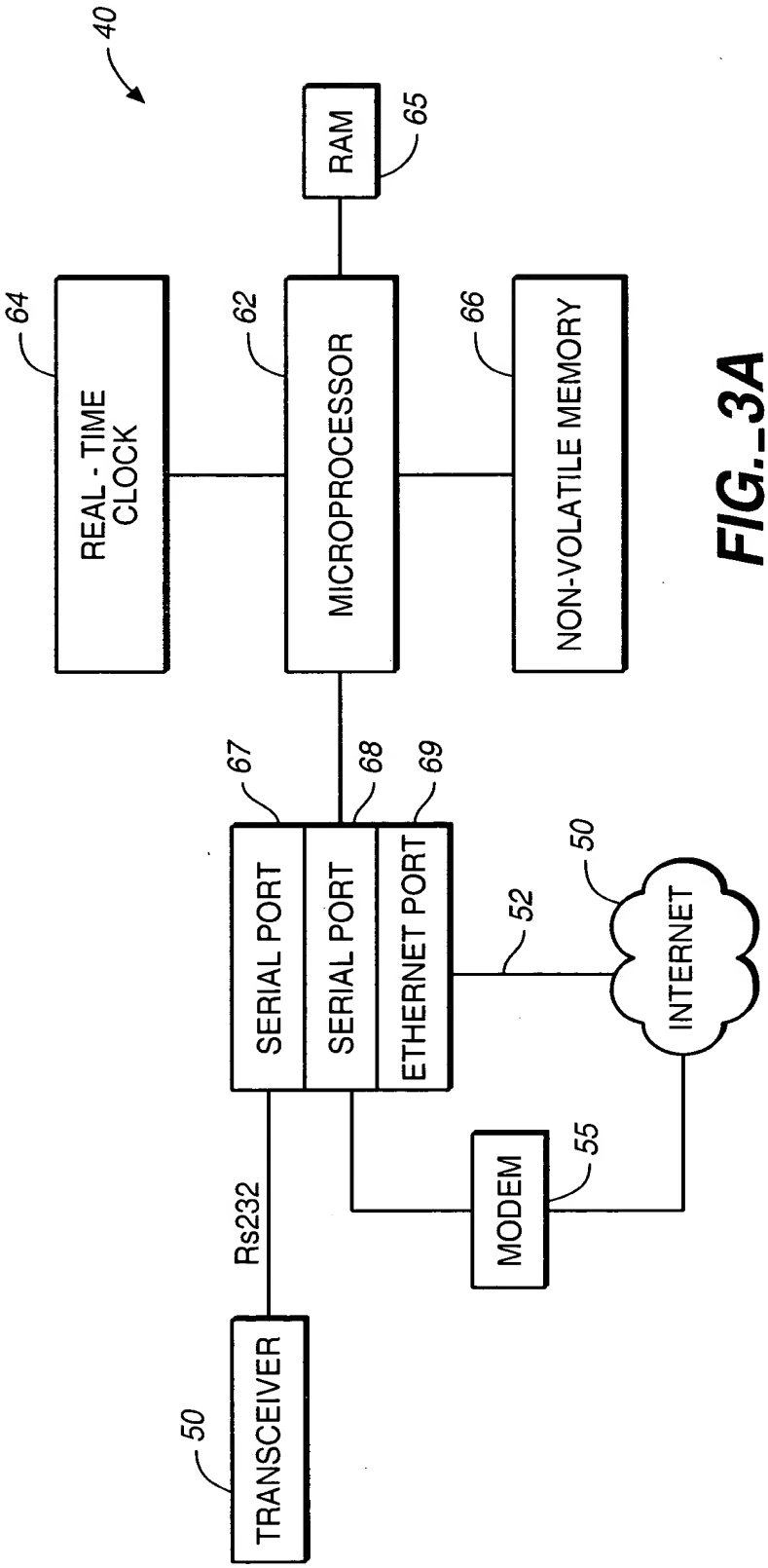
40
RAM
65
64
62
66
REAL - TIME CLOCK
MICROPROCESSOR
NON-VOLATILE MEMORY
67
68
69
SERIAL PORT
SERIAL PORT
ETHERNET PORT
50
52
INTERNET
55
MODEM
Rs232
50
TRANSCEIVER

FIG._3A

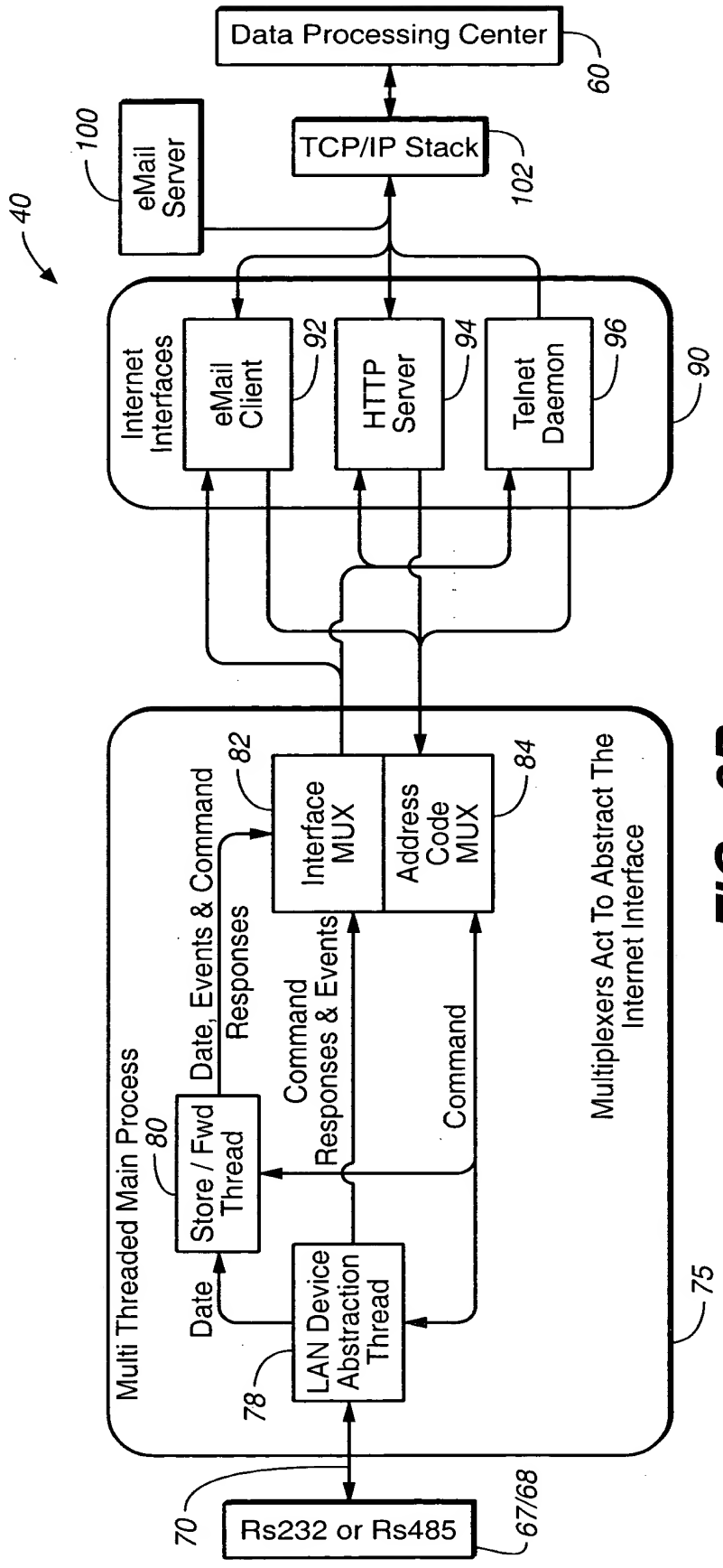
Data Processing Center
60
TCP/IP Stack
102
100
eMail Server
40
Internet Interfaces
eMail Client
92
HTTP Server
94
Telnet Daemon
96
90
Interface MUX
82
Address Code MUX
84
Multi Threaded Main Process
80
Store / Fwd Thread
Date, Events & Command Responses
Command Responses & Events
Command
Date
LAN Device Abstraction Thread
78
Multiplexers Act To Abstract The Internet Interface
75
70
Rs232 or Rs485
67/68

FIG._3B

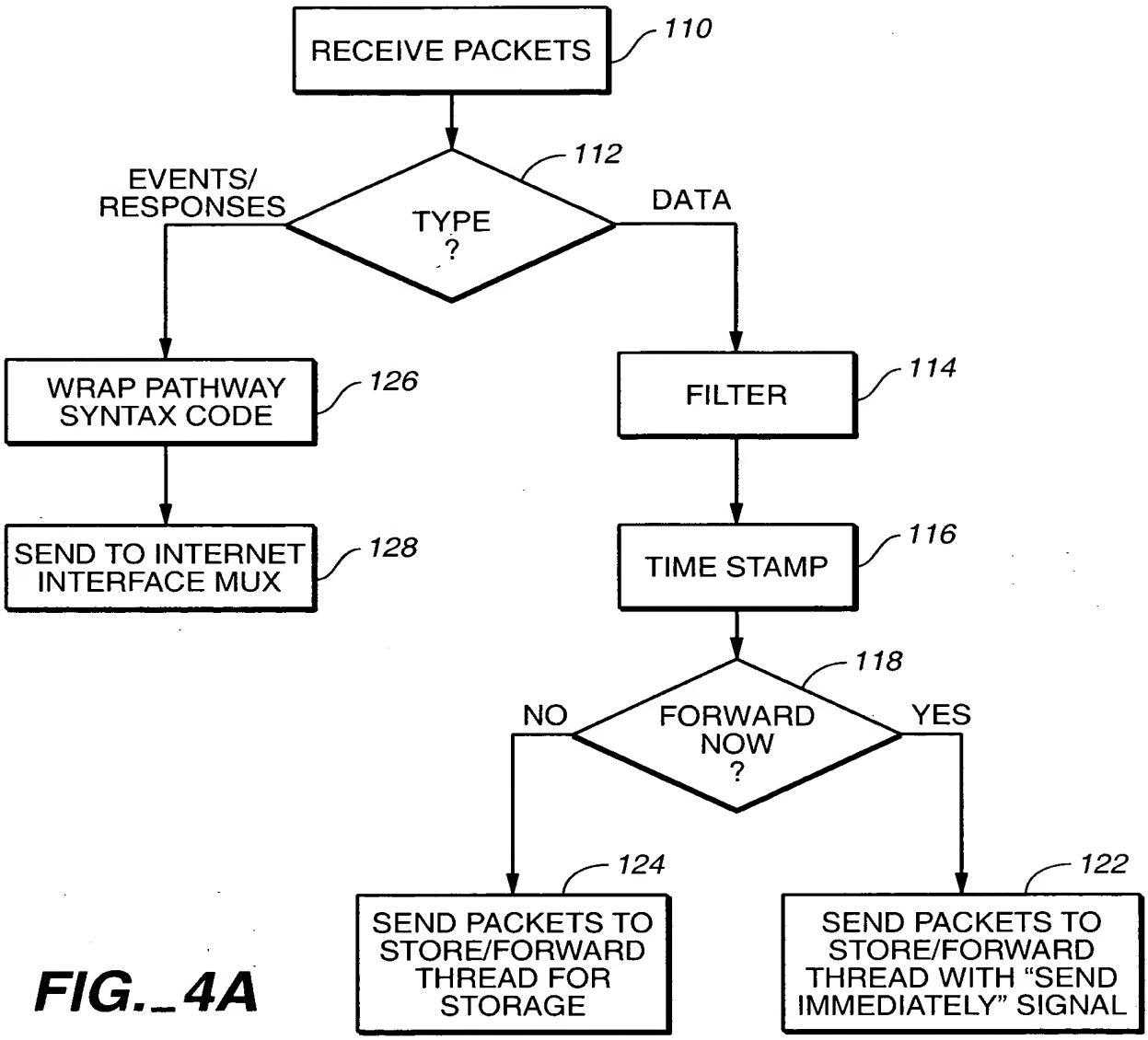
RECEIVE PACKETS
110
112
EVENTS/
RESPONSES
TYPE
?
DATA
WRAP PATHWAY
SYNTAX CODE
126
FILTER
114
SEND TO INTERNET
INTERFACE MUX
128
TIME STAMP
116
118
NO
FORWARD
NOW
?
YES
124
122
SEND PACKETS TO
STORE/FORWARD
THREAD FOR
STORAGE
SEND PACKETS TO
STORE/FORWARD
THREAD WITH "SEND
IMMEDIATELY" SIGNAL

FIG._4A

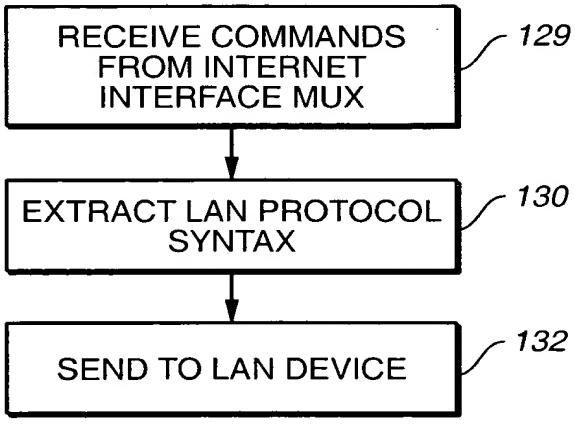
RECEIVE COMMANDS
FROM INTERNET
INTERFACE MUX
129
EXTRACT LAN PROTOCOL
SYNTAX
130
SEND TO LAN DEVICE
132

FIG._4B

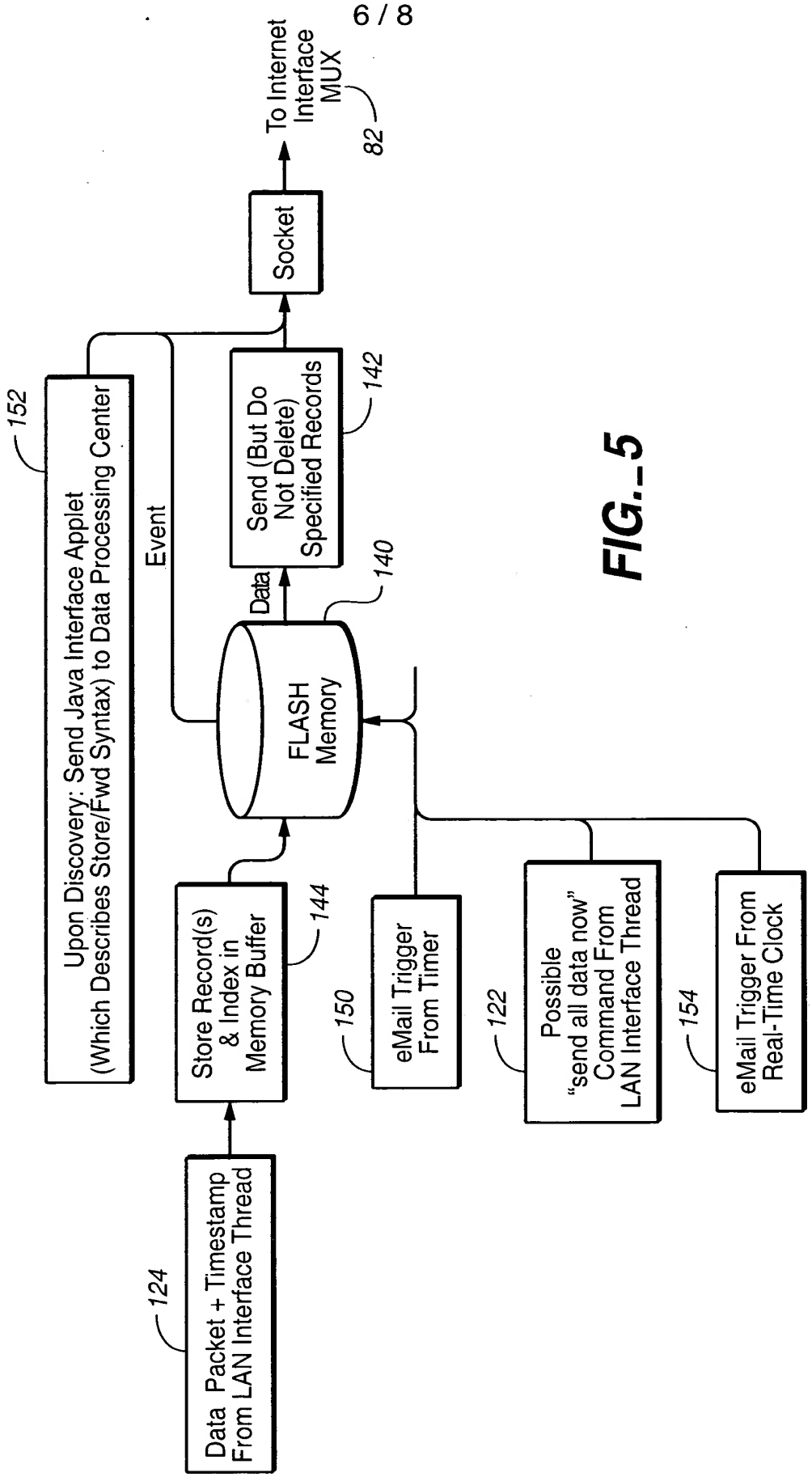
To Internet Interface MUX
82
Socket
Send (But Do Not Delete) Specified Records
142
Data
140
Event
FLASH Memory
Upon Discovery: Send Java Interface Applet (Which Describes Store/Fwd Syntax) to Data Processing Center
152
Store Record(s) & Index in Memory Buffer
144
eMail Trigger From Timer
150
Possible "send all data now" Command From LAN Interface Thread
122
eMail Trigger From Real-Time Clock
154
Data Packet + Timestamp From LAN Interface Thread
124

FIG._5

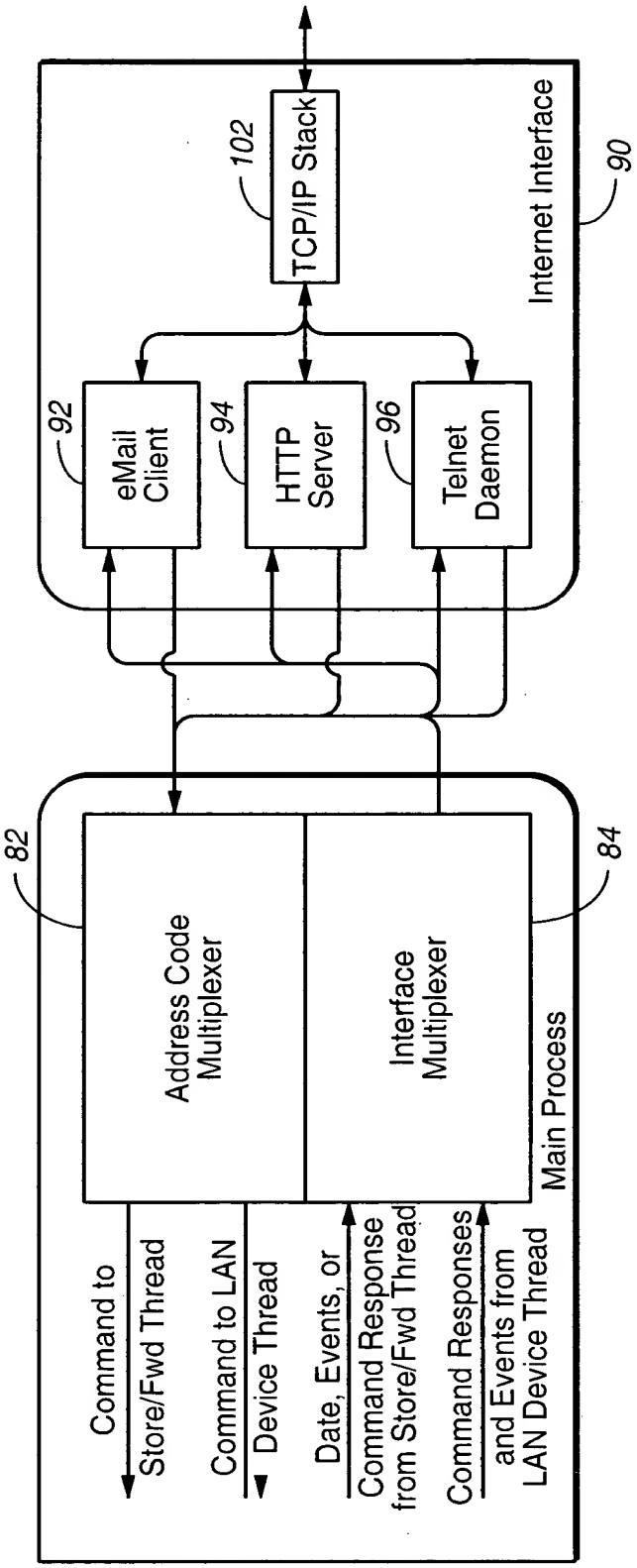
Internet Interface
90
TCP/IP Stack
102
eMail Client
92
HTTP Server
94
Telnet Daemon
96
Address Code Multiplexer
82
Interface Multiplexer
84
Main Process
Command to Store/Fwd Thread
Command to LAN Device Thread
Date, Events, or Command Response from Store/Fwd Thread
Command Responses and Events from LAN Device Thread

FIG._6

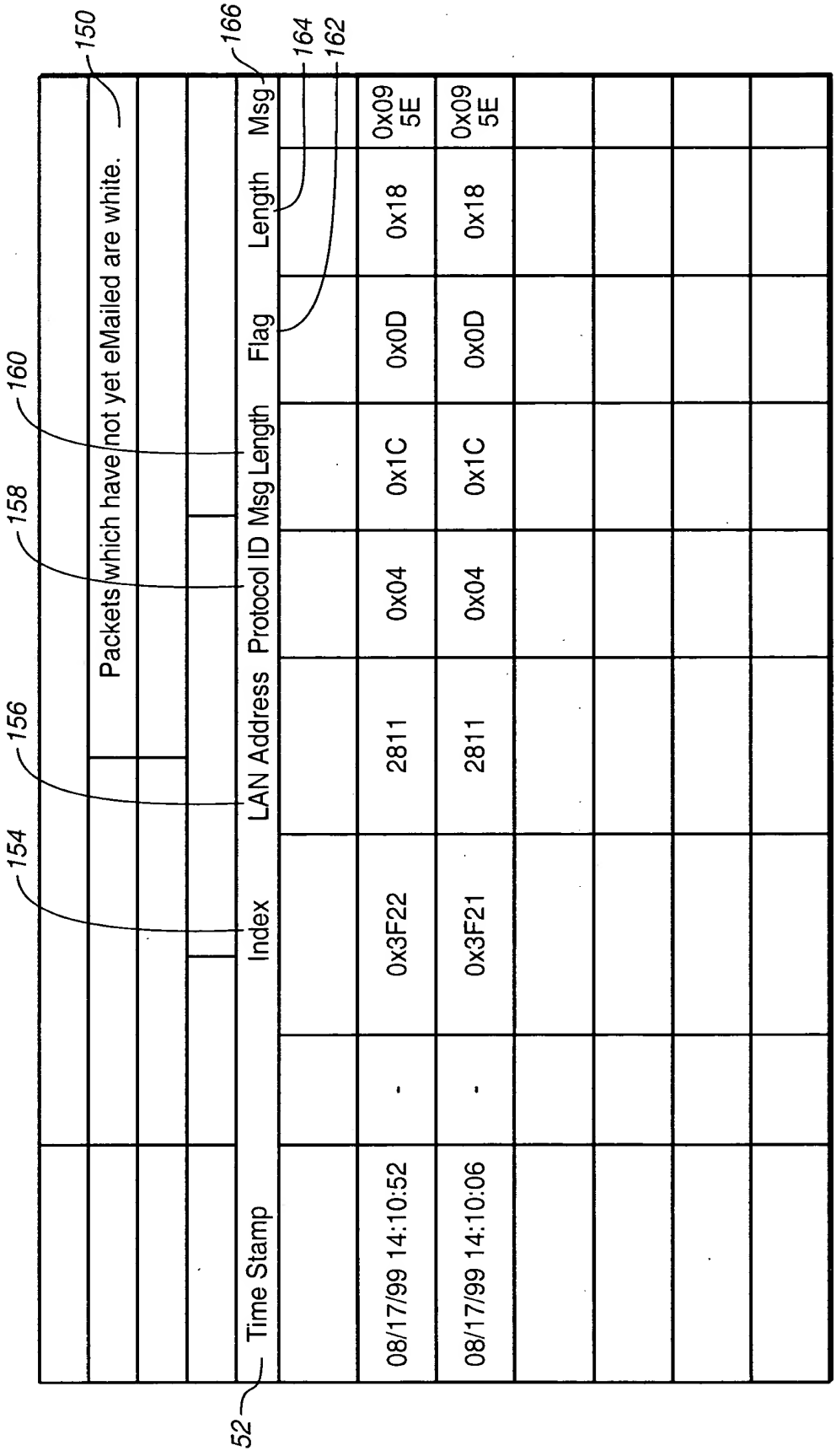
150
166
164
162
160
158
156
154
52
Time Stamp
Index
LAN Address
Protocol ID
Msg Length
Flag
Length
Msg
Packets which have not yet eMailed are white.
08/17/99 14:10:52
-
0x3F22
2811
0x04
0x1C
0x0D
0x18
0x09 5E
08/17/99 14:10:06
-
0x3F21
2811
0x04
0x1C
0x0D
0x18
0x09 5E

FIG._7